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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,818	02/14/2002	Nikhil V. Kelkar	NSC1P229/P05148	2031
22434	7590	06/28/2004	EXAMINER	
BEYER WEAVER & THOMAS LLP				
P.O. BOX 778				
BERKELEY, CA 94704-0778				
			ART UNIT	PAPER NUMBER
			2851	

DATE MAILED: 06/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/076,818	KELKAR ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Peter B. Kim	2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 May 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 5-8 and 10-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8 and 10-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date _____   |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

Applicant's arguments filed on May 6, 2004 have been fully considered.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5, 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa in view of Ishikawa et al. (Ishikawa).

Hasegawa discloses an apparatus and a method of scribing a semiconductor wafer, comprising imaging the wafer (1101) through a layer of opaque layer (115); generating a picture of the wafer from the image of the wafer using an infrared camera (1211), the picture identifying the scribe lines under the opaque material (para 0110); and scribing the wafer with a dicing device to singulate individual die on the wafer (para 0110-0111). However, Hasegawa does not disclose a computer for generating and mapping the coordinates of the scribe lines. Ishikawa discloses generating a picture of a wafer from the image and a computer using the picture to identify the scribe lines and scribing the wafer using the lines and dicing the wafer using the scribe lines (col. 3, lines 30-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide the computer of Ishikawa to the invention of Hasegawa in order to obtain chips with accuracy and reduction of damage as taught by Ishikawa in col. 1, lines 41-45.

Claims 6-8 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa in view of Ishikawa et al. as applied to claim 1 above, and further in view of Walker et al. (Walker).

The further difference between the claimed invention and the modified Hasegawa is the heating of the wafer to predetermined temperature wherein the predetermined temperature is approximately 90 degrees C or less. Walker also teaches heating the wafer to predetermined temperature of approximately 90 degrees C or less (col. 8, lines 47-57). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to further provide the method of heating and a temperature controller for heating the wafer to a predetermined temperature to the invention of Hasegawa in order to pre-cure and evaporate solvents as taught by Walker in col. 8, lines 50-55.

Claims 10 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa in view of Ueta (6,590,919).

The further difference between the claimed invention and the modified Hasegawa is using X-rays to image the wafer. Ueta discloses using x-ray to image the wafer and to divide the wafer into chips by scribing (col. 6, line 39 – col. 7, line 44). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to further provide another means to image the wafer where infrared camera imaging is in appropriate as taught by Ueta in col. 6, lines 39-65.

Claims 11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa in view of Hahn et al. (Hahn) (6,131,880).

The further difference between the claimed invention and the modified Hasegawa is using ultrasound to image the wafer. Hahn discloses using ultrasound to image and scribe the wafer (col. 10, lines 1-12). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to further provide another means to image the wafer where infrared camera imaging is in appropriate as taught by Hahn in col. 10, lines 1-12.

#### ***Remarks***

Applicant argues that Hasegawa does not teach or suggest the application of an opaque material onto the wafer. However, Hasegawa discloses in para 0061 that film 115 is made up on an opaque material.

Applicant argues that Ishikawa teaches away from the present invention. However, Ishikawa is relied only for the use of computer to generate image and identify the scribe lines.

#### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

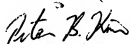
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter B. Kim whose telephone number is (571) 272-2120. The examiner can normally be reached on 8:30 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Peter B. Kim  
Primary Examiner  
Art Unit 2851

June 22, 2004